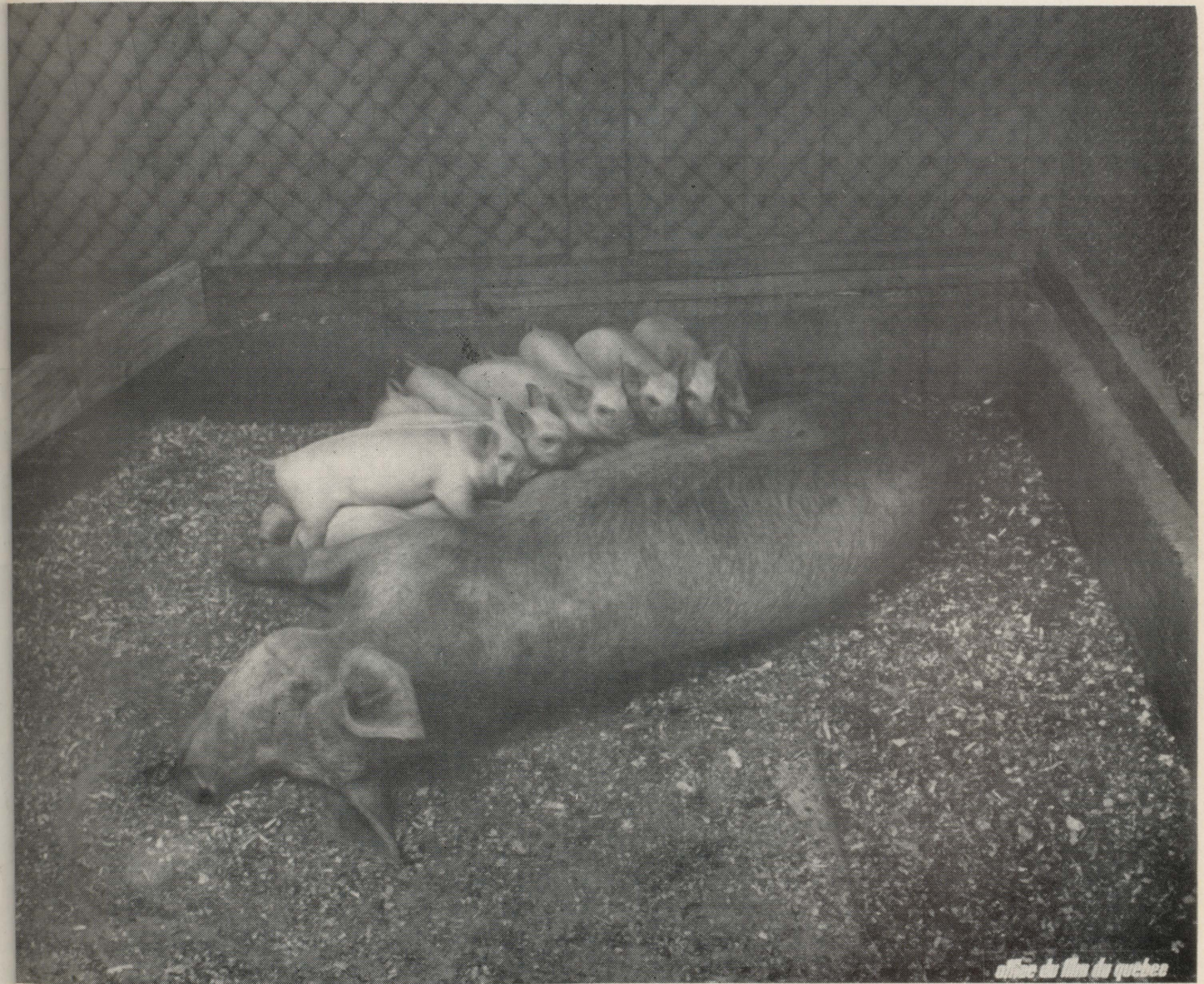


Macdonald College Library SEP 17 1974

THE macdonald JOURNAL

SEPTEMBER 1974



MJ
The Library
Box 256, Macdonald College
P.Q.
H9X 3M1



THE MACDONALD LASSIE

THE macdonald JOURNAL

September 1974

Macdonald Journal
Volume 35, No. 9
September 1974

Editor: Gordon Bachman
Managing Editor: Hazel M. Clarke
Associate Editor: Tom Pickup
Family Farm, Office of Information,
Quebec Dept. of Agriculture
Advertising Manager: R. J. Cooke
Production: Dorothy Parsons
Circulation: Mildred Young

The Macdonald Journal is published
every month by Ronald J. Cooke
Ltd., 451 Beaconsfield Boulevard,
Beaconsfield, Quebec, 514 697-2916.

Texts in this issue may be reprinted
editorially without permission;
permission should be obtained to
reproduce illustrations. Address
The Editor, Macdonald College,
Quebec. Second class mail registra-
tion number 0463.

Subscription rates are \$7.00 for
two years, \$9.00 for three years
in Canada, U.S.A., and foreign
rates are \$10.00 for two years.
Printed in Canada

In This Issue

Guest Editorial	2
Fighting in the Farrowing House	3
Trefoil Seed: A New Challenge for Quebec!	6
Macdonald Reports	10
The Family Farm	12
This Month with the QWI	17

Journal Jottings

I have yet to meet a woman who
doesn't like flowers, be they wild,
in the garden, or just delivered
from the florist. A bouquet of
dandelions picked by tiny fingers and
proudly presented to "mum" can
be as warmly received as a dozen
of the rarest roses. This knowledge
should have prepared me for one
woman's love for a slightly different
plant. I must admit, however, that
I was mildly surprised to learn that
happiness for Joan Habel is a
bouquet of birdsfoot trefoil.

Joan, who has been working in
the Extension Department since
graduating from the Diploma in
Agriculture course this year, never
misses an opportunity to expound
the virtues as well as the beauty
of birdsfoot trefoil. She has it
growing in her suburban garden,

jumps ditches and climbs fences to
gather a handful to identify it for a
visitor unfamiliar with this crop
and delights in telling a story told
to her by one of the professors
who was visiting a farm in the area.
While out looking over the fields a
farmer complained bitterly that
"those darned cows don't appre-
ciate this good pasture — they'd
rather eat those weeds over by
the fence." Smart cows; those
weeds were birdsfoot trefoil.

It took very little arm twisting to
get Joan to write the article in this
issue. We think you'll catch some
of her enthusiasm once you've
read it.

Joan is one of our "older" Dip
grads and, once her family have
spread their wings, she plans to

buy and operate a farm. I don't
have to tell you what she plans to
specialize in — I only hope that
there will be enough birdsfoot
trefoil left for harvesting after she
has filled her house with those
beautiful, colourful bouquets.

Hazel M. Clarke

Symbiosis — a magic word in nature! The dictionary defines the term as "a living together of two unlike organisms for the mutual benefit of each". In a miniature world, the lichens are a combination of fungi and algae, living together in mutual benefit so intimately that they appear as one plant. In an agricultural context, the seed farmer sees honeybees and trefoil plants as symbiotic — through pollination, the bees provide a good seed set, while the trefoil provides the pollen and nectar for the survival of the bees and the production of honey. In a broad sense, we can see symbiosis even in the relationships of people. The give and take of friendships provide two unlike persons with the spirit needed for the growth of mind and soul.

With the return of the students to the campus, we can take a look at symbiosis in one very special segment of the college population, the young people in the Diploma Course. (The Diploma Course is a two year course in general agriculture designed to train students in good farming practices and for work in agricultural industries.) Until 10 years ago, the "Dips" were traditionally sons and daughters of farmers. Then, with the gradual need of some urban dwellers to establish their roots in the land, the enrolment in the Diploma Course gradually swung in favour of the city student, who, on the average, had good academic records and a minimum of farm experience, gained by working in agriculture

during the summer months. In contrast, the average rural applicant entered the course with a lower academic standing, but a wealth of practical farm experience. The high school honour graduates from the country tend to search for high level careers away from the farm. Both good marks and farm knowledge are important for a well-rounded "dip" but are rarely found in one student — only one or two such students appear in each class.

It is to be hoped that these two very different groups will be encouraged to continue to work together in the Diploma Course. The city student enters the course with no preconceived ideas of what is the best crop to grow or how best to feed animals; new ideas are exciting and challenging to him. The rural "Dip" has the farming traditions of his family and district deeply ingrained and he can often be helped to enlarge his horizons by his urban classmates. To balance the scales, the farmers' sons invite the urban students home for weekends and holidays on the farm, where the theory of classrooms and glamorous ideas of life in the country are tempered by the realism of hard work in a difficult profession. Often a little tutoring

in physics is exchanged for help in drawing up livestock housing plans. Both students benefit — the symbiotic relationship is evident daily.

True, these diverse groups are often a handful for professors. Outlining courses to keep both groups interested and challenged is a major problem for planning committees. Some innovative teachers have found great success with courses encouraging individual projects or small group participation, realizing the important concept that there are great advantages in a mixed group. They know that the difficulties of training such a group must be solved. With so many city people moving onto farms and becoming neighbours to full-time farmers, it is unrealistic to think that the Diploma Course belongs solely either to one segment or to the other.

The underlying philosophy which enables the urban and rural "Dips" to help each other in growth must surely be their common love of the land. Let us hope that the co-operation they feel while at Macdonald carries on to their lives on their farms. A blend of progressive, innovative farming and an understanding of the age old tradition of roots in the land, learned from each other, will surely help our rural communities to remain strong.

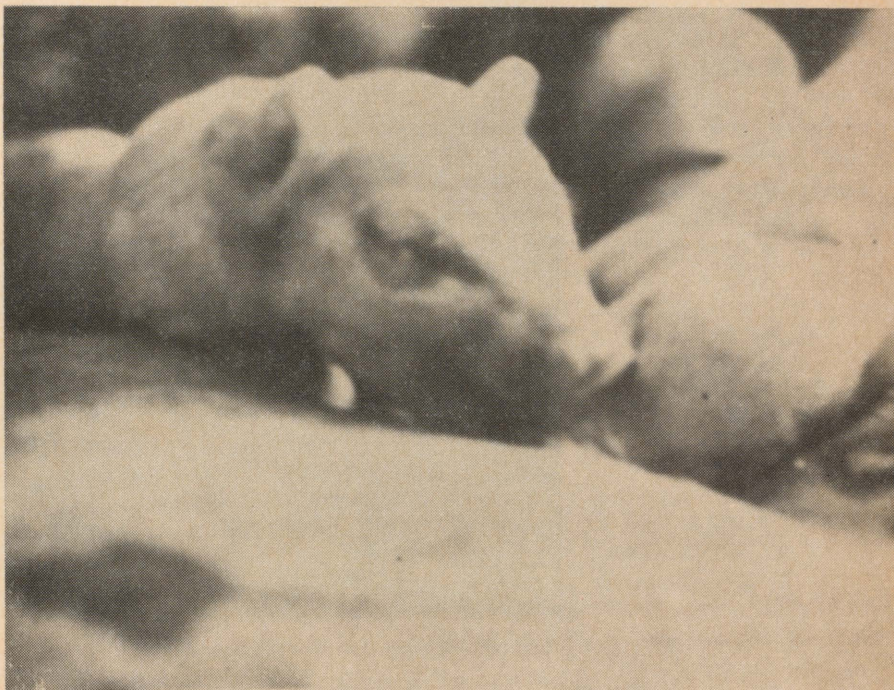
Joan Habel,
Dip '74.

fighting in the farrowing house

by T. G. Hartsock
Assistant Professor
Department of Animal Science

A close look at squealing new-born pigs reveals that they fight vigorously with each other for several hours after their birth. This fighting consists of pushing and/or biting rival littermates in order to gain access to a teat or to defend it from a challenger. Within the relatively short time of 12-24 hours, fighting decreases drastically and by several days of age, nearly all piglets consistently suckle from only one (or sometimes two) particular teat(s). This stable arrangement of piglets at the udder is called the nursing order and the fact that such an order is established is important — it means that each piglet's growth will be limited by the amount of milk available from its particular teat.

Around 20% of all live-born piglets die before the age of weaning, and most of these pigs die within the first week of age. Therefore one of the primary reasons for studying piglet behaviour was to gain information on the causes of these deaths. Newborn pigs must drink colostrum because the immunoglobulins contained in colostrum are their only protection from certain infectious diseases. The "first" colostrum in each teat is the most concentrated and earlier-born piglets get more than their share by moving up and down the udder and "sampling" each teat. When more piglets are born, they must fight to gain access to the teats and the more successful fighters get to suckle more

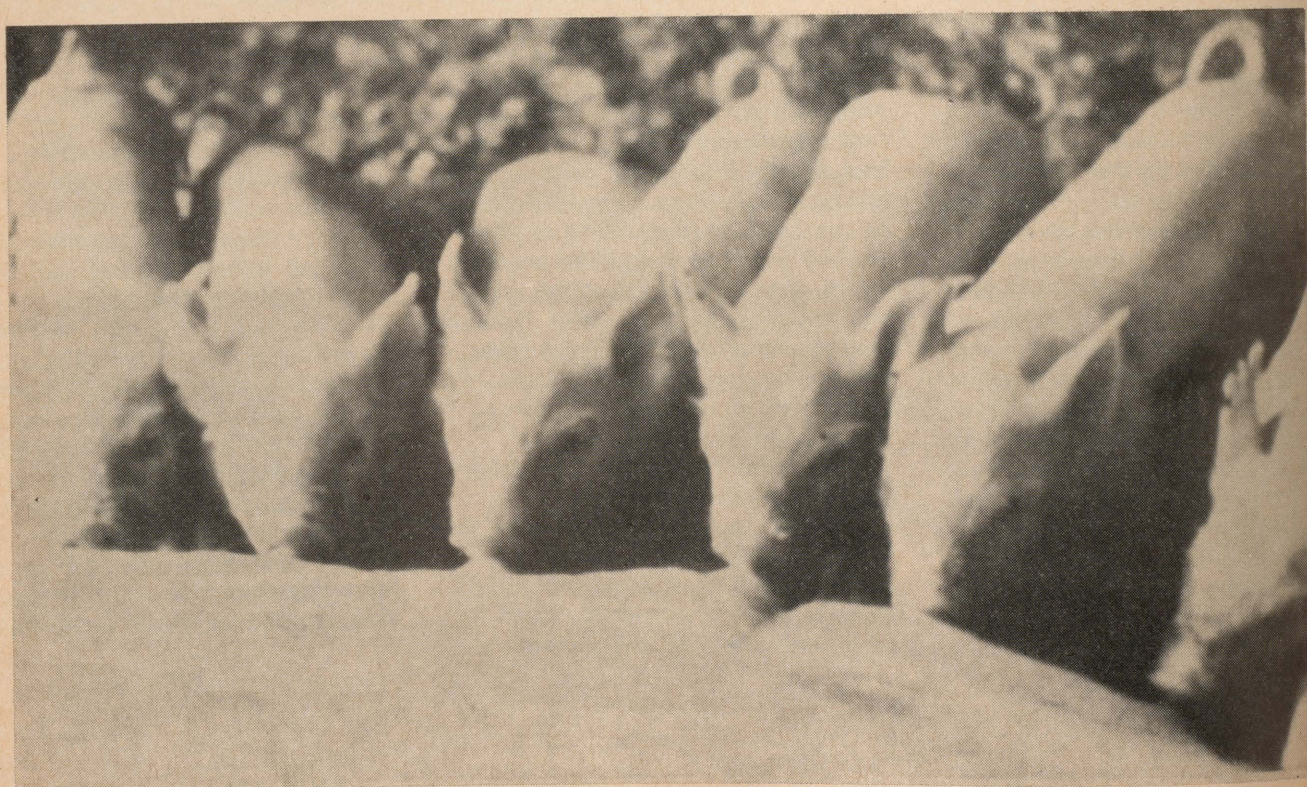
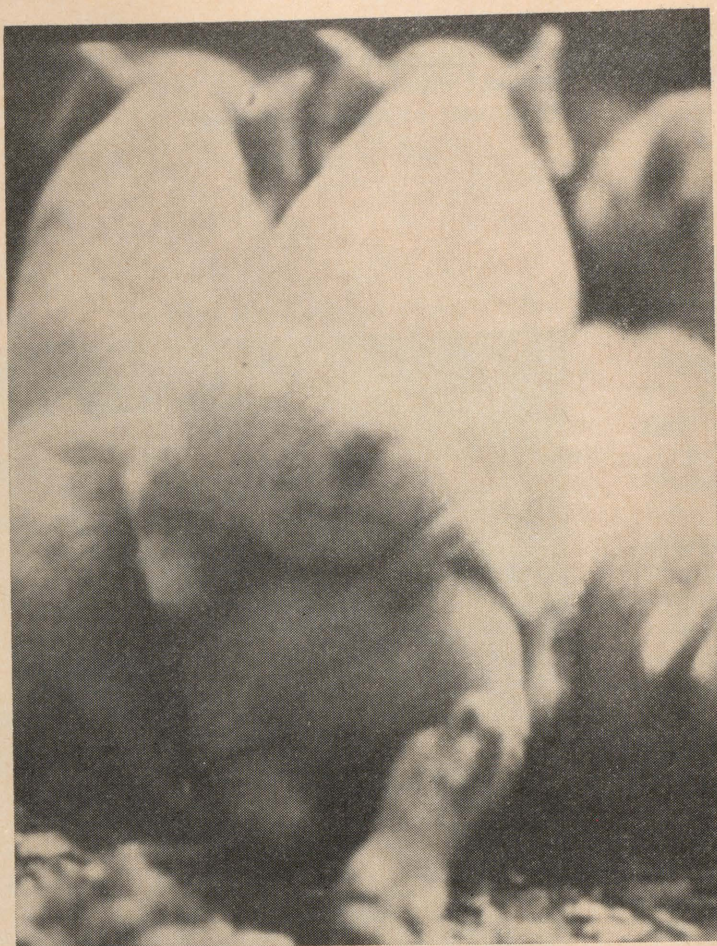


often. By suckling less often, the less-successful fighters also take in less energy and if the barn is too cold, they may be weakened or die because they can't produce enough body heat to keep them warm. As expected, heavier piglets are more successful at fighting than are their lighter littermates.

One of the most striking observations made in this study was the fact that mortality was higher in those piglets born toward the end of the farrowing. Data from 44 litters revealed that about 92% of the piglets born first, second or third in the birth order survived, while only 74% of the piglets

born tenth, eleventh or twelfth lived to 21 days of age. It is believed that the earlier born piglets have a higher survival rate primarily because of the teat sampling behaviour that results in their getting more of the concentrated colostrum, but there are other factors involved. One of these factors is that earlier-born piglets tend to be heavier than the ones born later. Therefore the earlier-born piglets not only have the advantage of being first to the udder but they also have a weight advantage when they must fight their later-born littermates. This weight difference is relatively

Two different views of the nursing
order established by piglets several
days after birth.



small but it could have a significant effect on mortality. A third factor is the stress associated with the birth process. Later-born piglets are more likely to be oxygen-stressed at birth due to the length of the birth process and this would cause them to be less vigorous at birth.

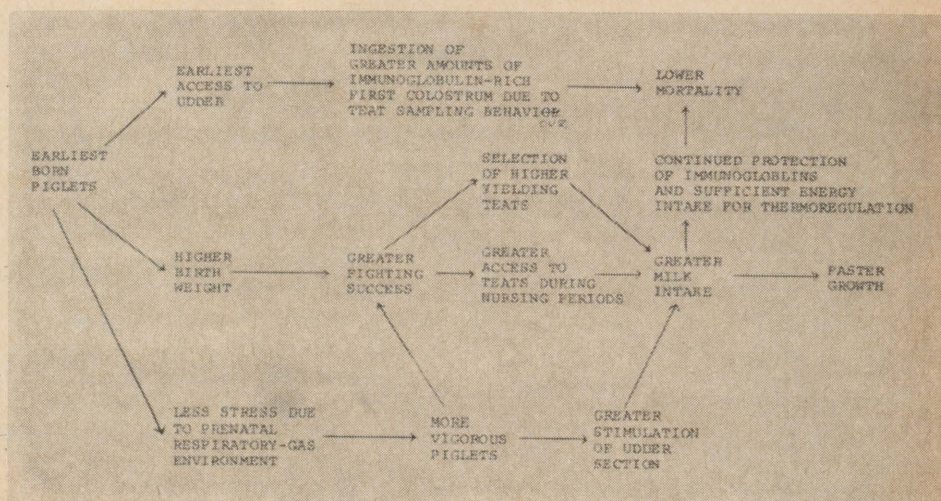
By 3-4 days of age, fighting at the udder is virtually non-existent and nearly all piglets are consistently suckling from one (or sometimes two) particular teat(s). Since the different teats yield varying amounts of milk, the early growth of each piglet will be highly dependent on the teat from which it suckles. Data from this study and from the work of others indicate that the forward teats are the most productive and therefore the growth of piglets suckling the teats in the front half of the udder is faster than that of those suckling from teats on the rear half of the udder. Therefore the piglet that "sucks the hind teat" is indeed at a distinct disadvantage.

Many studies have shown that the piglets which are heaviest at birth gain weight more rapidly than their lighter littermates. One suggested explanation is that heavier piglets are able to stimulate their udder section more vigorously and therefore get more milk. There is some evidence that this occurs, but the most important factor is that heavier birth-weight piglets seem to end up suckling the more productive forward

teats. It appears that the greater fighting success of the heavier piglets allows them to suckle from the teat of their choice. They are apparently able, to a certain extent, to choose the higher yielding teats. This may be accomplished either by simply moving toward the front of the udder or maybe even by recognizing some physical characteristic, such as distention or nipple size, that may be associated with high milk yield.

The diagram illustrates the behaviour-related factors which may influence mortality and early

growth in piglets. This work shows that neonatal behaviour is directly related to survival and growth and indicates that research on methods to alter or bypass the behaviour patterns which results in retarded growth or death for some of the piglets could result in substantial economic gains for the swine producer.



A New Challenge for Quebec!

by Joan Habel,
Extension Department.

Shortly after entering the Diploma Course, during our "Forage" classes, one small, beautiful plant became the object of my affections — Birdsfoot Trefoil! Then, when I discovered, reading "Seed Scoop" (the official Canadian Seed Growers' Association Newsletter), that Quebec hasn't one single farm cultivating trefoil for certified seed, my interest and study narrowed even further to the specialty of growing trefoil for seed. Hopefully someone, anyone, especially an innovative farmer, may pick up the following information and decide that this versatile plant, much neglected in Quebec's agricultural scene, is worthy of attention. Since the 1930s, North America has recognized that birdsfoot trefoil is a legume pasture, hay, and haylage crop which flourishes where other legume crops may fail. On less fertile soils, slightly acid, poorly drained or too dry, trefoil will grow, although, as would be expected, it takes optimum conditions to get optimum yields. Since stands tend to reseed themselves, trefoil will last for many years unless it winter kills under very adverse conditions. A farmer who has a good trefoil pasture knows that his cattle are getting a high quality, palatable feed which will never cause bloat.

With all these advantages, it might seem puzzling that more farmers are not growing trefoil. Two factors limit its use — firstly, farmers have had difficulty establishing good stands quickly, and secondly, trefoil is difficult to harvest and therefore expensive to buy. With liming, proper fertilization, better

seeding methods, pure stands, and herbicide use, the first difficulty is being overcome. It is the second problem, seed yield, which we will explore more fully.

Pod Shattering

The biggest stumbling block in harvesting trefoil seed is pod dehiscence (the tendency of ripe pods to shatter), scattering seed and greatly reducing yield. This phenomenon is the object of intensive study by researchers. Back in 1955, Iowa State University performed experiments in which a lot of interesting data were obtained about the relationship of pod and seed maturity to dehiscence. It was noted that pod development was rapid until the 15th day after full bloom, with maximum length attained within 21 days. Pod colour changed from deep green to purple about one week following full bloom, and then to dark green around the 15th day. Light green pods were noted between 22 and 24 days, and in this stage seeds tested had high germination rates and good size. At 27 days pods became light brown, with seed attaining morphological (structural) maturity; at 31 days they were dark brown and finally at 35 days, pods were black. The best harvest time occurred when the maximum number of pods were light green to light brown; there was not as much shattering or hard seed. Additionally, the relationship between pod dehiscence, relative humidity, and moisture equilibrium was studied in birdsfoot trefoil. It was discovered that not only relative humidity but also moisture

equilibrium between the pods and the atmosphere at a given relative humidity is a primary factor in pod splitting. There is less than .5 per cent difference in moisture between pods which shatter and those that don't. If the sun comes out from behind a cloud, shattering may start only to stop again if the sun disappears behind another cloud. When the relative humidity drops to 40 per cent or less, pods dry quickly to the dehiscent stage.

Honeybees

Evaluation has been made of pollination results with both pollen-collecting and nectar-collecting honeybees. Birdsfoot trefoil requires cross pollination by insects to obtain maximum seed set; it has plentiful pollen and nectar and the bees prefer this flower to other surrounding plants, such as alfalfa, clover, and mustard. It was found that pollen collectors, visiting flowers, effected more germinative seeds per pod than nectar collectors, because pollen is easier to extract than nectar, which is deep in the flower. Each time anthers and stigma are exposed during "tripping" of the petals, the opportunity exists for cross pollination.

Daylength

It appears that the flowering of trefoil depends on the number of hours of daylight present. In 1973 at Macdonald College, the blooming habits of the variety Leo were

The honeybee is the trefoil farmer's best friend.



For the farmer birdsfoot trefoil is a high-quality feed; for the photographer it is a thing of beauty as shown in the photos on these pages.

studied at various daylengths. It was discovered that this variety blooms profusely at 16 hours daylength (12 blooms per plant) but has even more blooms at 17 hours (15 blooms) and 18 hours (18 blooms). There was no bloom at all at 13 hours and few blooms at 15 hours.

Clipping

Experiments have been carried out which show that spring and early summer clipping of birdsfoot trefoil greatly reduced seed yields in comparison with unclipped stands. Other researchers, investigating the same aspect of seed production, discovered that seed yields from clipped and unclipped forage were not significantly different.

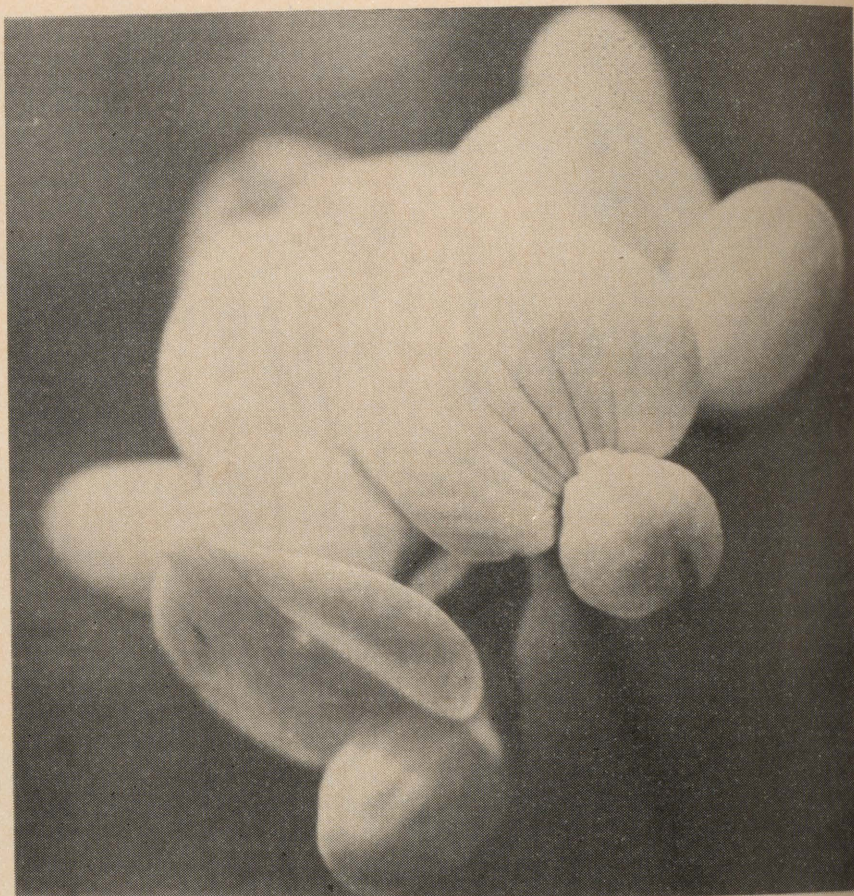
Harvesting Methods

Three methods of harvesting are used.

1. Direct combining alone is not a satisfactory method of harvest. Where a crop is not lodged, seed crops are in the upper part of the plant and yields can be fair to good. The problem lies with the prolific, moist leaves — they make combining slow and leave the seed with a lot of wet, green matter. Machinery may become clogged, and seed may be heated by the high moisture content of inert matter.
2. Mowing before combining may succeed if mowing and swathing are done in one operation when the dew is on the ground to

reduce shattering. In dry, warm weather, eight hours in the swath is sufficient. Under more humid conditions, 24-48 hours in the swath may be necessary for drying before combining.

3. Direct combining after defoliation seems to be the best method of harvest. Some of the best Ontario trefoil seed farmers have had very good performance using diquat as a defoliant on the plants in the field before combining. Diquat (Reglone) seems to delay shattering and allows time to combine the seed more safely.



Machinery Management

Studies made in P.E.I. showed that grain farmers were losing up to 40 per cent of their grain yield by faultily adjusted combines. These data could be projected logically to many seed farmers, and indicate that careful adjustment should be made, with help from machinery specialists, if necessary, to set the combine to get most of the seed off the field.

A thorough knowledge of the physiology of the birdsfoot



1. To avoid dehiscence, seed should be harvested when pods are light green to light brown, preferably on a cloudy day with high humidity.
2. Beeyards play an important part in abundant seed set — ideally, a small honey enterprise (one hive per acre), would be beneficial in seed production.
3. When Leo is planted, a minimum daylength of 16 hours is required for profuse bloom — 17 or 18 hours produce even more flowering. Since 17 hour daylength latitude runs right along the Vermont-Quebec border, Quebec is in a good geographical location for high seed yield.
4. Clipping is of no benefit and may even reduce yields.
5. The best way to harvest is by direct combining after defoliation with diquat.
6. Machinery must be carefully adjusted to obtain maximum seed yield.

Optimistically, Quebec will take a look at the fine performance of Bird's-foot trefoil to the south, in Vermont and New York, and to the west, in Ontario. We are missing out on one of our best potential sources of protein — with a little more progressive spirit we could be growing our own seed and excellent stands of this high-quality feed.

trefoil plant would seem to be the first step to successful seed production. Once a farmer has achieved a good field of trefoil by proper fertilization, planting methods, and weed control, he

must apply this knowledge of physiology throughout the growing season until he has the seed in the hopper. From the data gathered above, the following management areas are important.

Macdonald Reports

D. L. MacFarlane Emeritus Professor

At Convocation on June 1, 1974, Professor David L. MacFarlane was awarded the rank of Emeritus Professor. This well-deserved honour came to Professor

MacFarlane just prior to his retirement, on August 31, 1974, from his position as Chairman of the Department of Agricultural Economics of Macdonald College.

David MacFarlane is one of the values Quebec received from the West. Born in Saskatchewan,

he is a graduate of the Faculty of Agriculture, University of Saskatchewan. He did graduate work in Chicago and Harvard and received his Ph.D. from the University of Minnesota.



The Chancellor of McGill University, Dr. Donald Hebb, is shown congratulating Dr. D. L. MacFarlane on his being awarded the rank of Emeritus Professor.

Before coming to McGill in 1947 as Professor of Economics, Professor MacFarlane was Assistant Professor at the University of Kentucky. During the war he worked as an economist with the Foods Administration of the Wartime Prices and Trade Board; later he spent three years as director of meat and dairy products purchases for the United Nations Relief and Rehabilitation Administration in Washington.

More recently, he presented a Canadian farm machinery industry analysis to the House of Commons Committee on Agriculture and Colonization in connection with its inquiry into farm machinery prices. Then he acted as Chairman of the Federal Task Force on Agriculture, 1967-69. This Royal Commission was the only total inquiry into Canadian agricultural policy in the history of Canada. But most significant is that the work inspired (1) a new "mental approach" to the problems of the farm industry; and (2) a new orientation to agricultural research.

The most recent contribution to Canadian agriculture policy is the report prepared for the Food Prices Review Board on the Canadian Dairy Industry. It can be stated that this is the first fundamental research done on the total Canadian dairy policy and its implications to the public.

Professor MacFarlane is also the author of some 50 to 60 research papers, monographs, articles, and reviews for economic and agricultural journals and for the farm and financial press.

There is a saying that economics is a dismal science. David MacFarlane succeeded in transforming economics into a colourful subject of University teaching. His open-door policy encouraged students to discussion which has greatly broadened their horizon in many respects. Graduates of the Department of Agricultural Economics of Macdonald College and his graduates from the downtown campus of McGill University hold leading positions all over the world. One of them is in an executive position at the U.N.; another with O.E.C.D. in Paris; many in governments in the Carribean and so on. People facing important decisions have turned to him for advice 10 to 15 years after their graduation.

His contribution to the development of the so-called third world has been essential. He was instrumental in founding and promoting the McGill Centre for Developing Area Studies. His work has taken him to Nigeria, to Mali, to Afghanistan and, just recently, to the Congo for the World Bank.

With his being named Emeritus Professor, it is a good feeling to know that Professor MacFarlane will often be seen on the Campus even after his retirement.

Dr. L. A. Fischer,
Research Associate,
Department of Agr. Economics.

The Family

Farm

Published in the interests of the farmers of the province by the Quebec Department of Agriculture

The Education, Training and Information of Farmers

(Text of a speech delivered by Mr. Gaétan Lussier, Deputy Minister of Agriculture to the Second International Farm Management Congress on Thursday, July 18, 1974).

I am especially happy and also honoured to be here today to talk to you about the education, training and information of farmers.

The present era of advanced technology will progress at a geometric rate between now and the year 2,000.

All sectors, whether primary, secondary or tertiary, are undergoing and will undergo profound transformations in order to meet new irreversible concepts which form an integral part of our modern society.

In future, the performance and success of any enterprise will be increasingly judged by its productivity, efficiency, competitive capacity and profitability.

Are our farm operators ready to face these new demands? This is what we must ask ourselves today. Agriculture will be called upon to play a leading part in our history in the years to come.

The world population increase (76 million in 1973), and new styles of living and eating will compel it to do so. Moreover, in 1972, the warning signals appeared for the first time. Even the most prosperous countries suffered a scarcity of agricultural products, followed by a rather spectacular rise in food

prices. This disturbance luckily made all social classes aware of the vital importance of agriculture.

Bigger and better production became the slogan for rapidly remedying the situation. Countries owe it to themselves to help farmers meet these new challenges as soon as possible — and meet them with the best possible tools. We must picture the training of our farm operators on two different though essentially complementary planes, namely: 1. production techniques and methods; 2. economic aspects.

1. Agricultural sciences and techniques are developing rapidly thanks to research and new discoveries. Thus, the farmer must constantly relearn his trade, take refresher courses and adapt to recent discoveries and their possibilities.

An obvious example of this is the recent success of breeders in increasing the yield of certain plants and also adapting them to a wider range of climatic conditions. The advent of these improved plants has, so to speak, revolutionized overnight our settled ways and crop rotation and programs.

May I draw your attention to certain productions where farmers have been more or less forced to break with the past and start afresh.

First let me mention "Golden Crop" grain-corn, a variety long considered semi-tropical but which can now be successfully grown in North America above the 45th parallel. Barely 10 years ago, that would have been completely out of the question. The same may be said to

apply to soybeans. And what about the new varieties of spring wheat capable of yielding twice as much as conventional varieties like Selkirk?

The same applies to the livestock industry. Geneticists are constantly improving breeding lines to achieve ever increasing rates of feed conversion. Giant strides are also being made in livestock feeding with the use of a wider range of nutrients increasingly suited to our animal productions.

All this means that the farmer, like the engineer or the scientist, has to re-evaluate, to rethink his farming. Like other professionals, he has to keep up to date, to improve himself, and be open to new discoveries and techniques and rapidly absorb them.

A well-ordered production system will always be the primary essential of a farming enterprise and one of the factors of its success.

The avant-garde farm operator must have this scientific and technological curiosity plus an open-mindedness that will lead him to change his production methods and adjust them to new advances in agricultural sciences. The first and constant concern of tomorrow's farmer must be to get optimum production from every field and every type of livestock on his farm. To do so, he must keep himself informed by reading newspapers, farm periodicals, and guides. He will attend study days, conferences, and discussions in order to round out and improve his knowledge.

The Government owes it to itself to support separate training efforts

and assume wide responsibilities in this field to assure agriculture of a high-ranking place through adequate improvement of its manpower.

Faced with future world constraints and trends of farm-products markets, governments will have to develop a clear-cut strategy embodying well-defined short, medium, and long-term policies which will enable farmers to make rational choices and take the proper course.

In addition, the more that farmers can confidently rely on careful extrapolations and sound agricultural programs conceived by government authorities, the easier it will be for them to manage their farming enterprises efficiently.

The research which is so vital and essential must be quickly made known by effective systems and methods of extension. How and by whom are production methods to be spread and popularized? We are increasingly seeing concerted action by different levels of government, universities, and private industry. Farm organizations too should join forces with them. They all have the same client to serve, namely "The Farmer" who, for his part, often hears a different tune depending upon whom he is listening to. The messages he gets are sometimes conflicting or contradictory.

It is absolutely essential that, faced with the complexity of tomorrow's agriculture, the farmer shall be sure of having the best information available; this information must be as standard as possible and preferably be the result of a consensus between research workers, the responsible government depart-

ments, institutions of advanced agricultural learning, and industry. This will be possible if all the future sources of information can be gathered under one roof. You are probably thinking that it will be a difficult task. Yes, but not an impossible one. Let me give you some examples from our own experience in Quebec. Barely five years ago, two bodies were set up called the Quebec Plant Productions Council and the Quebec Livestock Productions Council.

The essential mandate of these two councils was to assemble information and to transmit it first to agricultural specialists and thence to producers. They were formed under the aegis of the universities, companies, institutes of agricultural technology, federal and provincial experimental farms and federal and provincials specialists and civil servants.

Various committees and boards under the two councils were made responsible for preparing integrated guides. By virtue of their constitutions, the councils became the duly authorized bodies for recommending or not recommending farming methods, techniques, and productions. They were there to set standards.

Within the councils, the results may be described as excellent. There is real harmony and esprit de corps in the recommendations, and there is unity of action and thought in the message to the farmers.

Thanks to the two councils, it has been possible, for example, to get all soil laboratories to accept voluntarily the same methods and the standard recommendation grids. Subdrainage and permeability

standards will soon be set in a similar fashion by the agricultural engineering committee of the Quebec Plant Productions Council.

Lastly, all who come in contact with the farmer speak the same language and use the same terms. Seeing himself backed by this scientific consensus and the unity of the recommendations, the farmer naturally feels more reassured and confident when he comes to make decisions about a certain production.

He is thus assured of being well informed about methods and techniques whose merits have been tested by the best specialists.

At the field level, these theoretical guidelines are extensively disseminated through demonstrations, meetings, audio-visual means, radio, and television messages, etc.

In order to keep in immediate touch with farmers and pass agricultural science and techniques on to them as quickly as possible, the Quebec Department of Agriculture decided in 1968 to decentralize its organization into 12 agricultural regions.

Each regional agricultural administration consists of a regional office under a coordinator aided by two assistant-coordinators, one an agrologist and the other a veterinarian. These in turn are backed by a complete team of specialists covering the main fields of activity, namely animal husbandry, field crops, farm management, horticulture, agricultural engineering and economics, young farmers, etc.

The 12 regional teams have to second and support the efforts of

84 local offices strategically distributed over Quebec's farming territory. A local office serves 350 commercial farms.

The coordinator and his team are responsible (amongst other things) for: 1. identifying agricultural problems actually encountered in the region's territory; 2. taking inventory of available resources and doing everything possible to develop them.

Every year, each region proposes a plan of action with the main priorities and the strategy to be adopted to promote rapid progress of farming and to increase its profitability.

Onto this basic plan are grafted objectives, quantified by each local team, in the following sectors: resources, planning, development of productions, farm management, education and training, marketing, dissemination of information, etc.

Each agricultural region has its P.P.B.S. (Planning Programming Budgeting System), its M.B.O. (Management by Objectives) broken down into 92 sub-projects and its quarterly M.I.S. (Management Information System) showing the steps to be taken, the adjustments to be made, and the achievements.

All these tools are geared to the information, education, training and support of the farmer so that he may have the fastest possible access to the best available technical and economic advice. Thus, every farmer is actually surrounded by a multidisciplinary team

ready to help him out at any time and aid him in his efforts.

In Quebec, the accent at the regional offices and laboratories level has truly been on intensive dissemination of information and highly improved training.

Please let me give you some figures about such achievements in 1973:

— 1,305 communications of all kinds, representing 937,185 letters delivered directly to the farmer's mailbox;

— 445 agricultural meetings attended by altogether 28,626 farmers;

— 166 field and experimental plot demonstrations illustrating new techniques and productions to a total of 18,805 farmers.

In this way, through information, education and training, technical aid and dissemination on a regional basis, we were able to bring about production of extra cattle feed worth \$9,200,000. in a single year.

This result was achieved thanks to coherent, well-adapted programs and realistic well-defined targets accompanied by well-conceived information intimately related to the problems pinpointed and the resources inventoried and to be developed. This is only one example among many others which it would take too long to tell you about now.

We are both proud and flattered to find that a number of provinces envy our system and also happy to realize that some have already adopted it.

To further illustrate our profound concern to ensure the best possible training and information for our farmers, let me tell you briefly about an avant-garde method we use in Quebec, namely putting production techniques on tape. In many cases, the scripts to be used in broadcasts and telecasts on crop or livestock productions have been written by the same specialists who worked on the recommendations. Advisers, professionals, and other government employees in the field have cooperated in the recording. This is a much used and highly appreciated form of extension in Quebec.

This modern information device makes it possible to render new farming concepts more readily understandable and easily grasped. The tape method has a great many advantages: the following are the main ones:

- 1 — trains and educates people during slack periods using all the modern audio-visual methods;
- 2 — conveys a standard, high-quality message throughout the territory;
- 3 — makes for consistency with the Department's major programs and aims;
- 4 — reaches very large audiences quickly and efficiently using simultaneously the best scripts and most highly qualified specialists.

By this means, using methods which are highly perfected and yet suited to the audience and within its grasp, we convey this up-to-date key information (resulting from consensus in the Plant Productions and Livestock Productions Councils) to nearly 14,000 farmers

a year in Quebec. I draw your attention to the fact that, in Canada as a whole, 20,000 farmers have benefited from refresher courses; this means that by far the majority of them were Quebecers.

With all this sound, integrated publicity-production guides, courses, lectures, printed matter, radio, newspapers, and television — not to mention all the opportunities that the farm operator has at all time for consulting various advisers and government employees — we believe that the Quebec farmer has the required information and technical training to manage his enterprise well.

During the next 10 years, this dissemination of information will have to be increasingly well organized and constantly readapted to enable our farm operators to make rapid and sure decisions.

II. However, it would be a serious mistake and a move in the wrong direction to consider only production methods without bothering about management or the economic aspects of the farming enterprise in general. In today's agriculture, these essentially complementary aspects have to go hand in hand.

Nor must farm bookkeeping be considered as an end in itself but rather as a tool for diagnostic purposes leading to advice on management designed for the better guidance of the farming enterprise towards a new profitability.

The business records of an enterprise often enable us to detect its technical and operational weaknesses and vice versa. In modern farming, both aspects must be considered on an equal footing to

assure the operator of recommendations which must be effective on two planes: 1. improvement of farming methods in the weaker sectors; 2. better investments of available capital and more efficient management of capital with a view to maximum profit.

Generally speaking, for a number of years past in North America, there has been emphasis on farm management and a really special effort has been made in that field

In many cases, it was first necessary to inculcate basic notions into farmers: balance sheets, cash basis of accounting, etc. Then systems grew more and more complex, with each province having more or less a special one of its own. Finally there appeared a national system called Canfarm, a detailed explanation of which will be given by another speaker.

All these bookkeeping systems or tools, manual or computerized, are of value only to the extent that they are conscientiously and competently interpreted by an expert with the object of "trouble-shooting", making diagnoses and giving genuine management advice.

Too often in the past, many bookkeeping systems have served only as sets of figures recording the operator's returns — large or small as the case may be — when they should have been serving as a basis for reorganizing the enterprise.

Our farmers now have a fairly good grasp of bookkeeping itself. For the most part, they succeed in making the proper entries without too many mistakes and in producing a fairly

valid document for analysis. However, most of them must still rely upon an adviser or a management specialist to evaluate the economic realities reflected by their farm accounts.

As the different systems of farm accounting become increasingly improved so as to be suited to the needs of agriculture in the 1980s, it will also become imperative to educate a new breed of farmer, able, like any good head of an industrial enterprise, to analyze figures, make his own diagnosis, pinpoint through economic standards and criteria the weaknesses of the enterprise, and gauge the corrective measures, new investment and programming needed.

Farmers capable of carrying out all these steps successfully without constant help from a specialist are still few and far between. However, we believe that the progressive farmer of tomorrow should be able to succeed in doing so. We must therefore strive to give this new type of training in order to meet the increasingly exacting requirements and demands which farming will impose upon us in the next decade.

And when, together with our farmers, we have climbed the last step toward independent decision-making soundly based on full knowledge of the facts, we shall be justified in the proud claim of having adequately completed our task of "making and improving the farm managers of tomorrow".

Many other economic concepts could contribute to good farm management and administration. I am thinking, for example, of better

knowledge on the part of the future farmer of the principles of hedging and pre-contracts. Too often, farmers know only a very little about these concepts and make use of them even less. However, in many cases, they could use such devices to advantage.

I notice that other speakers will be dealing more thoroughly with those matters and I am therefore cutting short my remarks on these methods which should be more widely used.

In short, the Government, in the face of new farming techniques and economic realities, will be obliged to provide its future farmers with solid instruction in specialized schools. This must be backed up by a program of continuing education kept constantly up to date. Government authorities will be responsible for developing and making known their short, medium, and long-term planning while never losing sight of secondary and tertiary agricultural sectors.

The economic aspects of future agricultural development and the training of its skilled operatives will, ipso facto, have to take into consideration new food habits and changes in the living standards of consumers.

The agricultural outlooks and market analyses of the departments and organizations concerned will have to reflect as closely as possible the trends and corrective measures to be applied to agriculture. It will be essential for the farmer to get to know these quickly in order to direct his enterprise accordingly.

To conclude them, it is important, in my opinion, for the training of farm operators to constantly relate advanced techniques to economic data. Both aspects must comple-

ment each other smoothly and it is thus that a farming enterprise will progress and come to compare favourably with other types of businesses or industries.

The modern operator will increasingly require precise and sophisticated advice. Hence, it can be expected that he will increasingly consult highly specialized persons and, to do so, be prepared to join farm-management and similar groups.

A progressive farmer will be one who follows the advances of the new agricultural technology, adapts quickly to changes and does his own "trouble-shooting" after analyzing the economic data of his enterprise.

Furthermore, training and improvement will continue to progress if applied in the context of "Canada, food supplier" and (as this implies) that the necessary measures be taken to safeguard the farmlands which are of such vital importance to the Canadian economy.

Regulations Concerning Agricultural Research Assistantships in Quebec

Every year, the Department of Agriculture, through the Quebec Agricultural Research and Services Council (C.R.S.A.Q.), makes graduate assistantships available to students who wish to undertake or continue post-graduate or professional studies in agricultural sciences in Quebec.

Eligibility

All candidates must be Canadian citizens domiciled in Quebec at least two years prior to commencing undergraduate studies; they must have a perfect knowledge of one of the official languages of the country, a bachelor's degree from

a recognized university, and be prepared to work for a higher degree by participating in research subsidized by the Quebec Agricultural Research and Services Council.

Selection Procedure

The candidate must be proposed by a professor of a Faculty of Agriculture or Veterinary Medicine **before February 1st preceding the start of the academic year.** The professor must submit the reasons for his choice and the candidate's official academic record to the Secretary of the C.R.S.A.Q. These documents must be appended to the description of the designated research project for which the research director submits a request for a grant to the C.R.S.A.Q.

According to the research project and the candidate's field of specialization, the C.R.S.A.Q. will advise the authorities of the Department of Agriculture to offer a special assistantship to the research director for the chosen candidate, in addition to the grant made for the said director's research project.

Undertaking

If the candidate accepts the assistantship, he must undertake to work for the Department of Agriculture anywhere in Quebec for a period of one year.

Amount and Duration

The value of the assistantship is \$4,000 a year for not longer than two years.

Publications

The holder of the assistantship must provide the C.R.S.A.Q.'s secretarial department with a stapled copy of his thesis.

QWI

This Month with the

MEMBERS' CONFERENCE

Mrs. J. Westover, Q.W.I. President, and Miss Edna Smith, 1st Vice President, attended the Members' Conference, held in **New Richmond, Bonaventure Co.**, on June 29, 1974.

The members had the opportunity to hold discussion sessions in groups on the following subjects:

- 1) What is the future of the Q.W.I.?
- 2) Are we doing all we can to encourage younger women to join the W.I.?
- 3) How can we make our meetings more interesting?
- 4) What can we do to put more meaning into the lives of our Senior Citizens?

The various opinions presented were very valuable and enlightening and will also prove beneficial in coping with the problems discussed.

In the afternoon session, members enjoyed a short, humorous skit which was presented by Black Cape branch entitled "Mrs. Jones' Dilemma".

Miss Edna Smith gave a detailed explanation of how our "Dollar" is budgeted by the W.I. Other items discussed by her were inflation and how it concerns everyone, the drama competition based on "folklore of your community" and several items from the Annual Convention.

As the new Convener of Education, Mrs. Lewis Henderson was welcomed by Mrs. Westover, and Mrs. Jones, the retiring convener,

was recognized for her good work during her term of office.

It was a good day and enjoyed by all.

Two Prize-winning Projects

Four of the five branches in **Sherbrooke County** entered plays in the play contest. The Milby branch play was the one chosen to be taken to the Provincial Convention at Macdonald College. This play, entitled "Bargain Cure", won first prize at provincial level for Sherbrooke County. The Milby branch ladies have repeated their play on several occasions.

Another winner for Sherbrooke County was their float at the annual Optimist Tombola Parade held June 22nd. The Optimist theme was "Pre-Olympic" and from this Sherbrooke Co. branches chose "Physical Fitness" as the theme for their float.

Background decoration was a huge banner bearing the Olympic emblem. Here and there on the float were large health posters. On the float were individuals dressed to represent sports: i.e., jogging, football, hockey, baseball, tennis, badminton, and swimming. A table in the centre of the float was laden with health foods and drinks.

Much preparation and work went into this project, and the organizers must have been more than pleased when their effort won first prize for Sherbrooke County.

"Thank You"

Mrs. Estelle Bulley of the Arundel W.I. received over 100 cards on her recent 90th birthday. She has asked if she may say "thank you" through these pages to all those who were so thoughtful.

"Thanks to all you lovely out-of-town folks for sending me such lovely cards for my birthday. This message of love is to the following W.I. branches all over Quebec: Grenville, Brownsburg, Beebee, Frontier, Lachute, Hemmingford, Stanbridge East, Val d'Or, Grand Cascapedia, Jerusalem-Bethany, and Gaspé.

"I do hope I may be spared to be with you next year.

"Love to each and every one of you."

Sincerely,
Mrs. Estelle (Pinkie) Bulley

CITIZENSHIP

Are you ever asked, "What is the Women's Institute?", "How many members and in how many countries do they live?"

Show with pride your A.C.W.W. tea towel depicting the colourful flags of the countries of the Associated Countrywomen of the World.

Make a banner for your meeting room. Articles needed: One curtain rod, two hooks for holding the rod on the wall, six or eight loops

Below: Mrs. Frances Taylor of Sherbrooke celebrating her 81st birthday.
Opposite page: The cast of Hatley Centre's play "Changing Times".

or hooks to sew along one length of the tea towel. Trim the other long edge with a ball fringe. Slip the curtain rod through the loops or rings and hang up.

Mrs. Gordon French,
Citizenship Convener.

Rose Honours Women's Institutes' Founder

Ottawa, May 31, 1974 — They've come a long way, baby.

Gone are the days when they had to fight to get household science courses established in Ontario schools, when their energetic founder and leader, Mrs. Adelaide Hunter Hoodless, conducted a fund-raising campaign to establish MacDonald Institute, now a part of the University of Guelph.

They're the Federated Women's Institutes of Canada. Just as concerned about the quality of life today as they were in 1897 when the organization was founded, the women submitted a brief to the Royal Commission on the Status of Women dealing with marriage and divorce, women in the labour force, and taxation as it pertains to married women. They have sent submissions and resolutions to various government departments dealing with health services, the aged, water pollution, agricultural retraining programs, and educational television.

They've set up a Northern Canada Women's Institute Fund to continue adult education for women of the North. Another of their ongoing and continuous projects carries the motto "Make and Keep Canada Beautiful."



It all started when Mrs. Adelaide Hunter Hoodless of Hamilton, Ont., recognized a need for education among rural women. The first meeting of the F.W.I.C. was held in Stoney Creek, Ont., on Feb. 19, 1897.

The F. W. I. C. is now established in all 10 Provinces, the Yukon and the Northwest Territories.

Recently, a new Canadian rose was named in honour of Mrs. Hoodless.

Developed by plant breeder Dr. Henry H. Marshall of Agriculture Canada's Morden, Man., Research Station, the Adelaide Hoodless

rose was released to the Canadian Ornamental Plant Foundation in 1972, the year of the F.W.I.C.'s 75th anniversary.

The Adelaide Hoodless rose is hardier than other rose cultivars of the floribunda class. A vigorous, upright, open shrub, it grows about four feet tall, and has only a few spines. Its glossy, normal green foliage is medium sized with seven leaflets per leaf and is moderately resistant to blackspot and mildew.

The rose blooms continuously and profusely from June right through to the autumn frosts. Its flowers

are in clusters of up to 25 blooms, semi-double to double with about 25 petals measuring 2.5 inches in diameter when fully open, medium red in colour, faintly fragrant and long-lasting as a cut flower.

Only one Canadian nursery is selling the Adelaide Hoodless rose this year, although demand is expected to be strong, especially from the approximately 55,000 F.W.I.C. members. It is expected that more nurseries will carry the rose next year.

Dear W.I. Members,

Summertime is a busy time for all and I was pleased to hear of your programs, i.e., branches sharing in a county float which won first prize for **Sherbrooke County**; display of wildflowers and grasses; fudge contest, judged by the men and sampled by all at **Franklin**; handicrafts demonstrated — smocking, hooked and braided rugs, hairpin lace and la Fleché, a very old form of hand weaving without a loom, at **Hemmingford**.

In these days of synthetics, which we take as a matter of course, it is still a little shattering to find that one can have synthetic honey! A **Howick** member has a recipe and made some and described how at a recent meeting.

Congratulations to Mrs. Frances Taylor of Sherbrooke on her 81st birthday. Mrs. Taylor was Secretary at Macdonald for several years before going to the National Office in Ottawa, where she was Secretary until her retirement.

It is interesting to learn about flower arranging and especially for different occasions as **Beebe** branch found when they had a demonstration recently by a local florist. The oldest member received a corsage and others received arrangements as door prizes.

Picnics are popular these warm days as are bus tours and visits to museums. With food prices so high now, it is good to hear ways of preserving our garden produce — such as the best way to freeze and later serve vegetables; summer drinks, etc.

Hatley Centre participated in Dominion Day celebrations in their village where their float won first place in the senior class.

They also presented a play "Changing Times" depicting fashions over the years. They are now on "tour" with it.

In spite of busy days, the less fortunate have not been forgotten, and gifts of jam, etc., have been taken to homes for the retarded, daffodils were sold for a local hospital and suggestions made for sunshine baskets.

Some of you, under your Citizenship programs, have been having quizzes on Canadian cities and towns. One branch studied etiquette for Canada's National Flag and one asked their members "What Canada means to you". I don't think many of us think very much about what our country means to us — we tend to take it very much



for granted. It is perhaps a good thing to stand and think about it occasionally.

I have just come back from a few day's visit to Ottawa. One morning we watched the Changing of the Guard ceremony on Parliament Hill. Perhaps many will think this sort of thing is "old fashioned" now — colourful and entertaining for the tourists but with no real meaning. I was deeply moved. This was a ceremony that has been going on for many years and when it began it was very necessary to have a guard for the Colours and for this guard to be alert, have their rifles clean and be ready for any emergency. I felt thankful that it was no longer an actual necessity. It should also remind us that we still have to be alert and interested in our country, its customs and its laws and be prepared to defend them.

Congratulations to **Lennoxville** who celebrated their 60th Anniversary with a banquet. They presented a Life Membership to their Past President, Mrs. S. Parker, and donated six maple trees to the cemetery.

Mrs. James Robertson,
Q.W.I. Publicity Convener.

A Busy Year

The Richmond Young Women's Institute (Richmond Co.) have 15 members and held 12 meetings last year. Four members received cups and saucers for having perfect attendance.

We raise our funds by catering to weddings and other organizations thus meeting our obligations to the Student Loan Fund at the Richmond Regional School, to the St. Francis Elementary School Committee for shelves in the new library, to the Sherbrooke Hospital Financial Campaign, and to the Richmond Brownies and Guides, to two special prizes at the local Agriculture Fair which are plain rolls and apple pie, to UNICEF, to donations to County Funds, to support the hot lunches at St. Francis Elementary school, to the Quebec Extension Fund, Quebec Service Fund, and to the Cecil Butters Home.

A social evening was enjoyed by most of the members by all going to Sherbrooke shopping and then being taken out for a Chinese supper at which time one member Mrs. May Stimson, was presented with a Life Membership pin for her outstanding work in the Women's Institute.

The Sept. birthday residents of the Wales Home were entertained by our group at a birthday party with a cake, decorated with candles, and homemade breads and cheese being served in the Recreation Room. Each birthday resident also received peppermint patties and a decorated cupcake to take back

to his or her room. Prizes were given for the oldest woman and the oldest man of the month, also prizes for marked napkins and cups. Residents of the Infirmary who were unable to attend the party were given peppermint patties and cupcakes.

Members' families are remembered in cases of illness or deaths with cards, flowers, and sunshine baskets. One member who moved away was given a clock as a memento of her work.

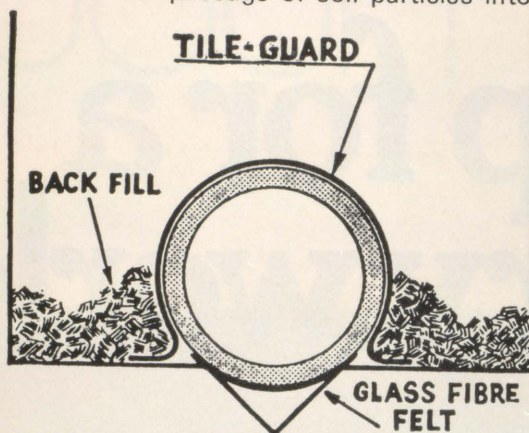
At Christmas the residents of the Knowles Rest Home are remembered with peppermint patties and homemade cookies. We send a gift for a woman and a man to the Douglas Memorial Hospital at Christmas time, and we remember two residents of the Dixville Home for retarded children with Christmas gifts. Handbags are sent to the Save the Children Fund every year in April.

NOW ... Prevent

FARM DRAINAGE TILE CLOGGING

With "Tile Guard" and "Glass Fibre Felt"

"Tile Guard" Drainage Tile Cover is a web-like mat composed of inert glass fibres made of materials specifically compounded to withstand underground alkalis and acids. It is virtually ageless, and effectively retards the passage of soil particles into the tile.



Why use 6" when 4" will do with Tile Guard and Permits use of smaller tile.

GLASS FIBRE FELT
For Under Support
and Protection
in Unstable
Soils

MR. FARMER: Discuss your problem with The County Agricultural Representative or Extension Specialist. For complete information at no obligation write or telephone collect to:

GLOBE GLASS SATURATORS LIMITED

Manufacturers of Glass Fibre Roofing Products and Tile Guard
P. O. BOX 190 PETROLIA, ONTARIO DIAL 882-2300
or Request Material from Your Drainage Contractor.

INSECT PROBLEM? Use an Aero-Dyne INSECT FOGGER



Don't let insects take the joy out of outdoor living. Fight flying insects with the original, self-contained portable insect fogger. NO method is more economical! You treat the whole area with a thick insecticide-carrying fog. NO residue or unpleasant odors.

Model 500 Insect Fogger
Retail Price Only \$49.95 Prepaid.
Check or money order in U.S. Dollars.

Dealer inquiries invited.

R. PHILIP BERMAN, ESQ.,
& ASSOCIATES LTD.,
480 Lefferts Avenue,
Brooklyn, New York, 11225.
Tel.: (212) 772-8539

**Only \$7
for 2 years,
\$9 for 3 years,
\$10 for
2 years outside
Canada.**

MACDONALD JOURNAL,
451 Beaconsfield Blvd.,
Beaconsfield 870, P. Q.

Please enter my subscription for years

at a cost of

Name

Address

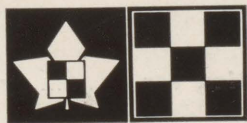
Help for a hungry world

Earth's appetite grows daily — and with it the need for ever more efficient use of food resources.

At Ralston Purina we believe our agri-products and programs are helping. We're active in many areas that have better foods, more foods and better production methods as their goals.

For example: research into new protein systems. Advice, counsel and arrangement to farm and stock operators around the world. Assistance to private sectors in agri-business. Development of low cost, high nutrition human foods.

We're working on many of the problems you'll be encountering as an agrologist. And we're also looking forward to working with you toward the solutions.



RALSTON PURINA
OF LTD.
DU CANADA LTÉE